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# Fiber Optics Test Equipment Catalog

**ABOUT OWL** - Optical Wavelength Laboratories, Inc. (OWL) was founded over five years ago with the idea that high-quality, accurate, and user-friendly test equipment can be affordable. Since then, OWL has become well accepted globally in the fiber optics industry, upholding its commitment to providing quality, yet affordable fiber test equipment.

Utilizing industry standards such as TIA, EIA, ISO/IEC and Telcordia standards and Fiber Optic Test Procedures (FOTPs), all OWL fiber optic test equipment is calibrated and traceable to National Institute of Standards & Technology (N.I.S.T.). OWL has proven quite able to give fiber optic professionals reliable test results for network quality assurance. These results are readily downloadable by most OWL meters to produce meaningful fiber optic certification reports via free OWL Reporter software.

**ABOUT OWL PRODUCTS** - OWL's fiber optic test equipment line includes optical power meters, optical loss test sets, optical return loss meters, multimode and single mode test kits, light sources, talk sets, optical length testers, and visual fault locators, as well as a range of accessories for cleaning and connectivity. Applications include: LAN, WAN, MAN, Telco, CATV, Laboratory, and FTTH. All OWL test equipment come with a two year limited warranty, covering manufacturing and assembly defects. Re-calibration is reasonably priced at 50.00 dollars per unit.

**WHO USES OWL METERS** - In OWL's history of over five years on the market, OWL has achieved a high profile list of professional organizations that utilize OWL meters for vital test results. OWL fiber optic certification reports assure them of the quality of service of their mission critical fiber optic networks. Below is a sample of a few high-profile organizations the use OWL fiber optic test equipment.



#### Telecom

Alcatel Internetworking  
AOL Time Warner  
AT&T  
Black Box Networks  
Charter Communications  
Cisco Systems  
EMC Computer Systems  
Frontier Communications  
Fujitsu Network Services  
JDS Uniphase  
Level (3) Communications  
Nextel Communications  
NTT Advanced Technology  
Qwest Communications  
SBC  
Sprint  
Sun Micro Systems  
TDS Telecom  
Verizon

#### Energy

Conoco  
Florida Power and Light  
GE Nuclear Energy  
Oklahoma Gas & Electric  
Progress Energy  
Texaco Chevron  
Westar Energy

#### National Laboratories

Los Alamos National Laboratory  
Oak Ridge National Laboratory

#### Defense

Defense Logistics Agency  
Defense Information Systems Agency  
Naval Air Warfare Center  
Naval Research Lab  
Naval Satellite Op Center (NAVSOC)  
Naval Security Group Activity  
Naval Support Activity  
Naval Surface Warfare Center  
NORAD at Cheyenne Mtn.  
Pentagon\*  
US Air Force  
US Army  
US Coast Guard  
US Department of State  
US Marines  
US NAVY

#### Government Agencies

Federal Aviation Administration  
Federal Bureau of Investigation  
National Weather Service  
Social Security Administration  
USDA  
US Mint  
US Postal Service

#### Finance & Banking

GMAC  
NCR  
Wachovia Corporation  
Wells Fargo Bank

#### Aerospace

Lockheed Martin  
McDonnell Douglas (Boeing)  
Northrop Grumman  
PanAmSat Corporation (Division of HUGHES)  
Raytheon  
TRW  
Vandenberg Tracking Station

#### Industrial/Manufacturing

Antheon  
Atmel Semiconductor  
BAE Systems  
Black & Decker  
Chubb Security Systems  
Cutler-Hammer  
GE Medical Systems  
General Dynamics  
General Motors  
Hartz Mountain Corp  
Honeywell  
Intel Corp.  
International Paper  
Motorola  
Pepsi-Cola  
Qlogic Corp.  
Rockwell International  
Samsung  
Siemens  
Simplex  
Tyco Electronics  
Westinghouse

#### Entertainment

NBC News  
Viacom  
Walt Disney World  
KCSN  
KPDX  
KTVK  
WDBJ

#### Educational

Baker College  
California Institute of Technology  
Colorado State University  
Eastern Illinois University  
Massachusetts Institute of Technology  
Michigan State University  
Ohio University  
Pennsylvania State University  
Texas Wesleyan University  
University of Arizona  
University of California-Davis  
University of California-Los Angeles  
University of California-Santa Barbara  
University of Connecticut  
University of Hawaii  
University of Michigan  
University of Nebraska  
University of North Carolina

plus many other community colleges and local school districts

**NOTICE:** All company names above are trademarked and are the sole property of their respective owners.

### Contact OWL

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**info.request@owl-inc.com**

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## NEED HELP CHOOSING A POWER METER? CALL 262-473-0643!

Use the feature list below to assist you in choosing the right power meter for your needs. You may also call our knowledgeable staff at 262-473-0643 for assistance.

POWER METER SERIES	STANDARD FEATURES														OPTIONAL FEATURES		
	POWER AND LOSS MEASUREMENT	ZERO REFERENCE	MULTIMODE	SINGLEMODE	DATA STORAGE	IN-FIELD LINK CERTIFICATION	SOFTWARE LINK CERTIFICATION	AUTO λ DETECTION	OPTICAL RETURN LOSS MEASUREMENT	BATTERY CHARGER	REMOTE MONITORING	DYNAMIC RANGE (dB)	MAXIMUM CALIBRATED WAVELENGTHS	FIBER LINK LENGTH MEASUREMENT	BI-DIRECTIONAL TESTING	INTEGRATED VISUAL FAULT LOCATOR	
	●	●	●	●	●	●	●	●	●	●	●	75	8		●		
	●	●	●	●	●	●	●	●		●	●	75	8	●	●	●	
	●	●	●	●	●	●	●				●	70	4				
	●	●	●	●	●		●			●	●	65	8			●	
	●	●	●	●								55	3				
	●	●	●									55	3				

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## Multimode Singlemode



### Description

The Fiber OWL 4 is a highly accurate hand-held optical power meter, capable of performing a wide range of functions from simple optical power and loss measurements to standards-based link certification. Its built-in Link Wizard walks the user through a series of steps, prompting the user to pick the parameters of their link under test, and sets an optical reference based on these parameters. This optical reference is used as a point of reference by which a link will PASS or FAIL against the chosen fiber standard. When used with OWL WaveSource fiber optic light sources, the Fiber OWL 4 provides fiber optic professionals with automatic wavelength switching so that the meter and light source are always set to the same wavelength, and automatic dual-wavelength storage cuts down on testing time and human error. Up to 1000 fiber runs can be stored memory, and can be downloaded into a PC using our free OWL Reporter software via the supplied serial cable. OWL Reporter displays fiber tests in either a summary or detail view, and prints out professional-looking certification reports that can be passed along to customers as proof of link certification. Data can also be saved to hard disk for later retrieval. A 2.5mm universal and 1.25 universal connector port are included to connect to a wide variety of popular fiber optic connectors, including SC, ST, FC, LC, and SFF. A filtered detector option is available for high-power applications such as CATV and telco ("C" versions), and the Fiber OWL 4 BOLT ("B" versions) comes configured with an integrated length tester used for accurate optical length measurement of a fiber link. The Fiber OWL 4 is enclosed in high-impact plastic, and a protective rubber boot provides additional shock protection. Its large backlit display is easy to read, and the 18-key pad allows for easy data entry. It can be used in many test environments, including LAN, MAN, WAN, FTTH, Telco, CATV, Manufacturing, and Laboratory.

#### Applications include:

- Certification Testing
- Attenuation Testing
- Optical Loss Testing
- Active Equipment Optical Power Testing
- FTTH Link Loss Verification
- Patch Cord Testing

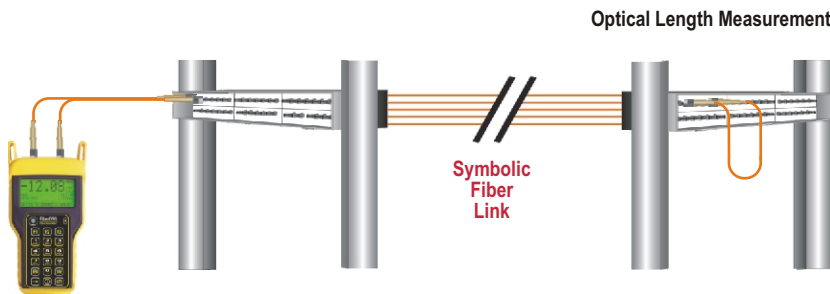
### Specifications

NIST-traceable Wavelengths (nm)	850, 1300, 1310, 1550
Additional Calibrated Wavelengths (nm)	980, 1490, 1625
Measurement Range (dBm; FO-4/FO-4B)	+5 to -70
Measurement Range (dBm; FO-4C/FO-4BC)	+25 to -50
Accuracy (dB)	+0.15
Resolution (dB)	0.01
Battery Life (hours)	up to 100 (9V)
Detector Port	Universal 2.5/1.25mm
Dimensions	3.48" x 6.48" x 1.1"
Weight	12 oz. (373 g)

### Ordering Info

FO-4	Fiber OWL 4 optical power meter	895.00
FO-4B	Fiber OWL 4 BOLT optical power meter	1400.00
FO-4C	Fiber OWL 4C optical power meter	940.00
FO-4BC	Fiber OWL 4C BOLT optical power meter	1445.00
U2.5-4	Replacement 2.5mm universal connector port	35.00
U1.25-4	Replacement 1.25mm universal connector port	35.00

The Fiber OWL 4 BOLT uses OWL's optical length testing technology as a unique, low-cost alternative for users who need to measure the length of optical fibers. Fiber installations are increasingly required to have fiber length measurements to comply with bid requirements. Kits including the Fiber OWL 4 BOLT fit the bill nicely. The length tester in the Fiber OWL 4 BOLT uses a "round-robin" method of measuring fiber length. This is accomplished by looping back two fibers at one end of the fiber run with a patch cord. The round trip time that the light takes to travel through both fibers is converted to length in kilometers, then divided by two to show the length of the fiber cable. There is no need to measure the length of all the fibers; the length measurement can be applied to all fibers in the cable. This method of length testing provides accurate measurements, and saves time and money. Measuring fiber by the jacket or manual length measurement are accepted methods of measurement; however, there are many scenarios where this may not be possible. Length markings may be hard to reach if they are already terminated in a patch panel, and networks that contain riser cables may not be accurately measured. Optical measurement of fiber produces accurate results without the need for jacket markings or manual length measurement.



**NOTE: the Fiber OWL 4 BOLT is not an OTDR-like device. It does not measure distance to a fault, but measures the total length of a fiber link based on a two-fiber loopback method.**



## Description

Fiber OWL 4 Series test kits are ideal for the fiber optic professional who requires standards-based certification of fiber links, including TIA-568, ISO 11801, various Ethernet standards, among others. The Fiber OWL 4 can also be configured with custom standards to meet the needs of various fiber optic applications. All Fiber OWL 4 Series test kits come with a Fiber OWL 4 Series optical power meter and a WaveSource light source, and can also include a visual fault locator. Accessories include: a hard-shell carrying case, protective rubber boots, carrying straps, download cable, 9-volt batteries, NIST-traceable certificate of calibration, and a CD-ROM containing product manuals and OWL Reporter software.

WaveSource light sources come in three versions:

**WaveSource MM** - contains a stabilized dual-wavelength LED source (850 and 1300nm) in a single port for accurate testing of multimode fibers; can also include a VFL port

**WaveSource SM** - contains a stabilized dual-wavelength laser source (1310 and 1550nm) in a single port for accurate testing of singlemode fibers; can also include a VFL port

**WaveSource Quad** - contains all four wavelengths (850 & 1300nm for multimode; 1310 & 1550nm for singlemode) in a single unit

For more detailed information about WaveSource light sources, see page 9.



## Fiber OWL 4 MM Test Kits

SKU	Meter	Source	Auto Test	Length Test	Price
KIT-FO4-WSMDxx	Fiber OWL 4	WaveSource MM	Yes	No	1440.00
KIT-FO4-WSMDVxx	Fiber OWL 4	WaveSource MM *	Yes	No	1640.00
KIT-FO4B-WSMDxx	Fiber OWL 4B	WaveSource MM	Yes	Yes	1945.00
KIT-FO4B-WSMDVxx	Fiber OWL 4B	WaveSource MM *	Yes	Yes	2145.00

\* - SKUs with the letter 'V' include a Visual Fault Locator port.

## Fiber OWL 4 SM Test Kits

SKU	Meter	Source	Auto Test	Length Test	Price
KIT-FO4-WSSDxx	Fiber OWL 4	WaveSource SM	Yes	No	2190.00
KIT-FO4-WSSDVxx	Fiber OWL 4	WaveSource SM *	Yes	No	2390.00
KIT-FO4B-WSSDxx	Fiber OWL 4B	WaveSource SM	Yes	Yes	2695.00
KIT-FO4B-WSSDVxx	Fiber OWL 4B	WaveSource SM *	Yes	Yes	2895.00

\* - SKUs with the letter 'V' include a Visual Fault Locator port.

## Fiber OWL 4 SM/MM Test Kits

SKU	Meter	Source	Auto Test	Length Test	Price
KIT-FO4-WSMDSxx	Fiber OWL 4	WaveSource Quad	Yes	No	2795.00
KIT-FO4B-WSMDSxx	Fiber OWL 4B	WaveSource Quad	Yes	Yes	3300.00

### OPTIONAL UPGRADES

Precision Coupled Visual Fault Locator (PCVFL) Include 'V' at end of the SKU **ADD 295.00**

## Accessories

To make your test kit complete, we have a broad range of accessories, including patch cords, cleaning supplies, power transformers, and multimode inspection scopes. OWL test kits come standard with carrying cases, protective rubber boots, carrying straps, download cables, and universal connector ports; however, replacements for these items are also available. For more information, please see pages 17-19 or call 262-473-0643.

## Notes

- 1) If a kit part number contains 'xx', please specify 'ST', 'SC', or 'FC' depending upon your required connector type.
- 2) For more information about the PCVFL, see page 12.
- 3) Kits are also available with filtered detectors that are designed for CATV and other high-power application testing. Please call OWL at 262-473-0643 with any questions.

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## Multimode Singlemode



### Description

The Micro OWL is a highly accurate hand-held optical power meter, capable of performing a wide range of functions from simple optical power and loss measurements to standards-based link certification of TIA-568-B.3 networks. Its built-in Link Wizard walks the user through a series of steps, prompting the user to pick the parameters of their link under test, and sets an optical reference based on these parameters. This optical reference is used as a point of reference by which a test will PASS or FAIL. Up to 1000 fiber runs can be stored memory, and can be downloaded into a PC using our free OWL Reporter software via the supplied serial cable. OWL Reporter displays fiber tests in either a summary or detail view, and prints out professional-looking certification reports that can be passed along to customers as proof of link certification. Data can also be saved to hard disk for later retrieval. A 2.5mm universal and 1.25 universal connector port are included to connect to a wide variety of popular fiber optic connectors, including SC, ST, FC, LC, and SFF. The Micro OWL is enclosed in high-impact plastic, and a protective rubber boot provides additional shock protection. Its large backlit display is easy to read, and the 18-key pad allows for easy data entry. It can be used in many test environments, including LAN, MAN, WAN, Telco, CATV, Manufacturing, and Laboratory.

Applications include:

- TIA-568-B.3 Network Certification - Attenuation Measurements - Patch Cord Testing
- Optical Loss Measurements - Active Equipment Optical Power Measurements

### Specifications

NIST-traceable Wavelengths (nm)	850, 1300, 1310, 1550
Measurement Range (dBm)	+5 to -70
Accuracy (dB)	+0.15
Resolution (dB)	0.01
Battery Life (hours)	up to 100 (9V)
Detector Port	Universal 2.5/1.25mm
Dimensions	4.94" x 2.75" x 1.28"
Weight	10 oz.

### Ordering Info

MOUFX	Micro OWL optical power meter	645.00
U2.5-4	Replacement 2.5mm universal connector port	35.00
U1.25-4	Replacement 1.25mm universal connector port	35.00

Available from:

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## Optical Loss Test Kits

### Description

Micro OWL Series test kits are ideal for the fiber optic professional who requires standards-based certification of TIA-568-B.3 fiber links, as well as quick link-budget based optical loss measurements. All Micro OWL Series test kits come with a Micro OWL optical power meter and a multimode and/or singlemode light source, and can also include a visual fault locator. Accessories include: a hard-shell carrying case, protective rubber boots, carrying straps, download cable, 9-volt batteries, NIST-traceable certificate of calibration, and a CD-ROM containing product manuals and OWL Reporter software.

Three light source options are available:

**Dual OWL 850** - contains a stabilized 850nm LED source for accurate testing of multimode fibers at 850nm

**Dual OWL** - contains a stabilized dual-wavelength LED source (850/1300nm) for accurate testing of multimode fibers

**Laser OWL** - contains a stabilized dual-wavelength laser source (1310/1550nm) for accurate testing of singlemode fibers

For more detailed information about Dual OWL multimode and Laser OWL singlemode light sources, see page 10.



### Micro OWL MM Test Kits

SKU	Meter	Source	Auto Test	Length Test	Price
KIT-MO-DO850st	Micro OWL	Dual OWL 850 ST	No	No	814.00
KIT-MO-DO850sc	Micro OWL	Dual OWL 850 SC	No	No	829.00
KIT-MO-DOst	Micro OWL	Dual OWL ST	No	No	1040.00
KIT-MO-DOsc	Micro OWL	Dual OWL SC	No	No	1065.00

#### OPTIONAL UPGRADES \*

	INCLUDE	ADD
Precision Coupled Visual Fault Locator	'-V' at the end of the SKU	295.00
Beaming Optical Length Tester (BOLT)	'-BOLT-NL' at the end of SKU	575.00
Visual Optical Length Tester (VOLT)	'-VOLT' at the end of the SKU	395.00

### Micro OWL SM/MM Test Kits

SKU	Meter	Source	Auto Test	Length Test	Price
KIT-MO-DOxx-LOxx	Micro OWL	Dual OWL Laser OWL	No	No	2235.00

#### OPTIONAL UPGRADES \*

	INCLUDE	ADD
Precision Coupled Visual Fault Locator	'-V' at the end of the SKU	295.00
Beaming Optical Length Tester (BOLT)	'-BOLT-NL' at the end of SKU	575.00
Visual Optical Length Tester (VOLT)	'-VOLT' at the end of the SKU	395.00

### Notes

If the part number above contains 'xx', please specify 'ST', 'SC', or 'FC' depending upon your required connector type.

\* - NOTE ON OPTIONAL UPGRADES: up to 4 total units may be included in any kit. For MM kits and SM kits, up to 2 of the upgrades may be chosen; for SM/MM test kits only one of the upgrades may be chosen. Also, it is unnecessary to choose both the BOLT and the VOLT since they both perform optical length measurement. For more information about the PCVFL, BOLT, or VOLT, see their respective pages in this catalog, or call 262-473-0643 with any questions.

### Micro OWL SM Test Kits

SKU	Meter	Source	Auto Test	Length Test	Price
KIT-MO-LOxx	Micro OWL	Laser OWL	No	No	1840.00

#### OPTIONAL UPGRADES \*

	INCLUDE	ADD
Precision Coupled Visual Fault Locator	'-V' at the end of the SKU	295.00
Beaming Optical Length Tester (BOLT)	'-BOLT-NL' at the end of SKU	575.00
Visual Optical Length Tester (VOLT)	'-VOLT' at the end of the SKU	395.00

### Accessories

To make your test kit complete, we have a broad range of accessories, including patch cords, cleaning supplies, power transformers, and multimode inspection scopes. OWL test kits come standard with carrying cases, protective rubber boots, carrying straps, download cables, and universal connector ports; however, replacements for these items are also available. For more information, please see pages 17-19 or call 262-473-0643.



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**Multimode  
Singlemode**



## Description

The WaveTester is a highly accurate hand-held optical power meter, capable of performing a wide range of functions from simple optical power and loss measurements to standards-based link certification. When used with OWL WaveSource fiber optic light sources, the WaveTester provides fiber optic professionals with automatic wavelength switching so that the meter and light source are always set to the same wavelength, and automatic dual-wavelength storage cuts down on testing time and human error. Up to 100 fiber runs can be stored memory, and can be downloaded into a PC using our free OWL Reporter software via the supplied serial cable. As data is downloaded, OWL Reporter runs a link wizard that asks for information about the link under test which is used to certify the data using one of several popular cabling standards. OWL Reporter displays fiber tests in either a summary or detail view, and prints out professional-looking certification reports that can be passed along to customers as proof of link certification. Data can also be saved to hard disk for later retrieval. A 2.5mm universal and 1.25 universal connector port are included to connect to a wide variety of popular fiber optic connectors, including SC, ST, FC, LC, and SFF. The WaveTester is enclosed in high-impact plastic, and a protective rubber boot provides additional shock protection. Its backlit display is easy to read, and the 4-button interface allows for easy operation. It can be used in many test environments, including LAN, MAN, WAN, Telco, CATV, Manufacturing, and Laboratory.

Applications include:

- Fiber Standard Certification
- Attenuation Measurements
- Optical Loss Measurements
- FTTH Link Loss Verification
- Patch Cord Testing
- Active Equipment Optical Power Measurements

## Specifications

NIST-traceable Wavelengths (nm)	850, 1300, 1310, 1550
Optional Additional Wavelengths (nm)	980, 1490
Measurement Range (dBm)	+5 to -60
Accuracy (dB)	+0.15
Resolution (dB)	0.01
Battery Life (hours)	up to 250 (9V)
Detector Port	Universal 2.5/1.25mm
Dimensions	4.94" x 2.75" x 1.28"
Weight	10 oz.

## Ordering Info

WTUFX	WaveTester optical power meter	450.00
U2.5-4	Replacement 2.5mm universal connector port	35.00
U1.25-4	Replacement 1.25mm universal connector port	35.00

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## Description

WaveTester Series test kits are ideal for the fiber optic professional who requires standards-based certification of fiber links, including TIA-568, ISO 11801, various Ethernet standards, among others. The WaveTester can also be used to certify links using custom standards to meet the needs of various fiber optic applications. All WaveTester Series test kits come with a WaveTester optical power meter and a WaveSource light source, and can also include a visual fault locator. Accessories include: a hard-shell carrying case, protective rubber boots, carrying straps, download cable, 9-volt batteries, NIST-traceable certificate of calibration, and a CD-ROM containing product manuals and OWL Reporter software.

WaveSource light sources come in three versions:

**WaveSource MM** - contains a stabilized dual-wavelength LED source (850 and 1300nm) in a single port for accurate testing of multimode fibers; can also include a VFL port

**WaveSource SM** - contains a stabilized dual-wavelength laser source (1310 and 1550nm) in a single port for accurate testing of singlemode fibers; can also include a VFL port

**WaveSource Quad** - contains all four wavelengths (850 & 1300nm for multimode; 1310 & 1550nm for singlemode) in a single unit

For more detailed information about WaveSource light sources, see page 9.



## WaveTester MM Test Kits

SKU	Meter	Source	Auto Test	Length Test	Price
KIT-WT-WSMDxx	WaveTester	WaveSource MM	Yes	No	995.00
KIT-WT-WSMDVxx	WaveTester	WaveSource MM *	Yes	No	1195.00

\* - SKUs with the letter 'V' include a Visual Fault Locator port.

## WaveTester SM Test Kits

SKU	Meter	Source	Auto Test	Length Test	Price
KIT-WT-WSSDxx	WaveTester	WaveSource SM	Yes	No	1745.00
KIT-WT-WSSDVxx	WaveTester	WaveSource SM *	Yes	No	1895.00

\* - SKUs with the letter 'V' include a Visual Fault Locator port.

## WaveTester SM/MM Test Kits

SKU	Meter	Source	Auto Test	Length Test	Price
KIT-WT-WSMDSxx	WaveTester	WaveSource Quad	Yes	No	2350.00

### OPTIONAL UPGRADES

Precision Coupled Visual Fault Locator

### INCLUDE

Include '-V' at the end of the SKU

### ADD

295.00

## Accessories

To make your test kit complete, we have a broad range of accessories, including patch cords, cleaning supplies, power transformers, and multimode inspection scopes. OWL test kits come standard with carrying cases, protective rubber boots, carrying straps, download cables, and universal connector ports; however, replacements for these items are also available. For more information, please see pages 17-19 or call 262-473-0643.

## Notes

If the part number above contains 'xx', please specify 'ST', 'SC', or 'FC' depending upon your required connector type.

For more information about the PCVFL, see page 12.

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## Multimode Singlemode



OPTICAL WAVELENGTH LABORATORIES			
Customer Name <u>John Smith</u>		Date of Calibration <u>April 25, 2006</u>	
Report Number <u>2917</u>		Date of Next Calibration <u>April 25, 2008</u>	
Meter Serial Number <u>FO49999</u>		Calibrated by <u>Robert Best</u>	
Source Serial Number <u>WSA1999</u>		Temp. <u>72°F</u> Ref. Hum. (%) <u>30%</u>	
Transfer Standard ID <u>FO21172</u>		Technician's Signature <u>RJB/GJO</u>	
<b>NIST # 814342</b>			
Optical Light Source Certificate of Calibration			
Wavelength	850 nm	1300 / 1310 nm	1550 nm
Coupled Power	-20.0 dBm	-20.0/-10.0 dBm	-10.0 dBm
Fiber Core Diameter	62.5 μm	62.5/9 μm	9 μm
Connector Style	SC	SC / SC	SC
Optical Power Meter Certificate of Calibration			
Wavelength	850 nm	1300 / 1310 nm	1550 nm
Transfer Standard	-10.0 dBm	-10.0 dBm	-10.0 dBm
Before Calibration			
After Calibration	-10.0	-10.0	-10.0
Range Check	0 dBm N/A	-10 dBm -10.00	-20 dBm -20.00
1300 nm	-30 dBm -30.00	-40 dBm -40.00	-50 dBm -50.00
<b>N.I.S.T. TRACEABLE</b>			

### Description

The ZOOM is an accurate hand-held optical power meter, capable of measuring optical power and loss in a wide range of test environments, including LAN, MAN, WAN, Telco, CATV, Manufacturing, and Laboratory. Its 2.5mm universal connector port is able to connect to a wide variety of popular fiber optic connectors, including SC, ST, & FC. An optional 1.25mm universal port can be purchased separately to allow for connection to LC, MU, and other SFF connectors. ZOOM series optical power meters are enclosed in high-impact plastic, and a protective rubber boot provides additional shock protection. Its bright red LED display is easy to read, and a single push-button allows for simple optical referencing.

Two models are available:

**ZOOM (p/n: ZOUFFX)** - the ZOUFFX is multimode/singlemode ready, and is configured with 850, 1300/1310, and 1550nm.

**Silicon ZOOM (p/n: ZOVSFX)** - the ZOVSFX contains a Silicon detector that allows testing of multimode fibers at 650, 850, and 980nm.

Applications include:

- Attenuation Measurements
- Optical Loss Measurements
- Patch Cord Testing
- Active Equipment Optical Power Measurements

### Specifications

NIST-traceable Wavelengths (nm)	850, 1300/1310, 1550
Measurement Range (dBm)	+3 to -52
Accuracy (dB)	±0.24
Resolution (dB)	0.1
Battery Life (hours)	up to 15 (9V)
Detector Port	Universal 2.5
Dimensions	4.94" x 2.75" x 1.28"
Weight	10 oz.

### Ordering Info

ZOUFFX	ZOOM optical power meter	289.00
ZOVSFX	Silicon ZOOM optical power meter	177.00
U2.5-4	Replacement 2.5mm universal connector port	35.00
U1.25-4	1.25mm universal connector port	35.00

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## Description

ZOOM Series test kits are ideal for the fiber optic professional who requires quick and simple optical power and loss measurements. All ZOOM Series test kits come with a ZOOM Series optical power meter and a multimode and/or singlemode light source, and can also include a visual fault locator. Accessories include: a hard-shell carrying case, protective rubber boots, carrying straps, 9-volt batteries, NIST-traceable certificate of calibration, and a CD-ROM containing product manuals.

Three light source options are available:

**Dual OWL 850** - contains a stabilized 850nm LED source for accurate testing of multimode fibers at 850nm

**Dual OWL** - contains a stabilized dual-wavelength LED source (850/1300nm) for accurate testing of multimode fibers

**Laser OWL** - contains a stabilized dual-wavelength laser source (1310/1550nm) for accurate testing of singlemode fibers

For more detailed information about Dual OWL and Laser OWL light sources, see page 10.



## ZOOM MM Test Kits

SKU	Meter	Source	Auto Test	Length Test	Price
KIT-ZOS-DO850st	Silicon ZOOM	Dual OWL 850 ST	No	No	359.00
KIT-ZOS-DO850sc	Silicon ZOOM	Dual OWL 850 SC	No	No	374.00
KIT-ZO-DOst	ZOOM	Dual OWL ST	No	No	684.00
KIT-ZO-DOsc	ZOOM	Dual OWL SC	No	No	709.00

OPTIONAL UPGRADES *		INCLUDE	ADD
Precision Coupled Visual Fault Locator		'-V' at the end of the SKU	295.00

## ZOOM SM/MM Test Kits

SKU	Meter	Source	Auto Test	Length Test	Price
KIT-ZO-LOxx	ZOOM	Laser OWL	No	No	1484.00

OPTIONAL UPGRADES *		INCLUDE	ADD
Precision Coupled Visual Fault Locator		'-V' at the end of the SKU	295.00

SKU	Meter	Source	Auto Test	Length Test	Price
KIT-ZO-DOxx-LOxx	ZOOM	Dual OWL Laser OWL	No	No	1879.00

OPTIONAL UPGRADES *		INCLUDE	ADD
Precision Coupled Visual Fault Locator		'-V' at the end of the SKU	295.00

## Accessories

To make your test kit complete, we have a broad range of accessories, including patch cords, cleaning supplies, power transformers, and multimode inspection scopes. OWL test kits come standard with carrying cases, protective rubber boots, carrying straps, download cables, and universal connector ports; however, replacements for these items are also available. For more information, please see pages 17-19 or call 262-473-0643.

## Notes

If the part number above contains 'xx', please specify 'ST', 'SC', or 'FC' depending upon your required connector type.

For more information about the PCVFL, see page 12, or call 262-473-0643 with any questions.

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## Multimode Singlemode

OPTICAL WAVELENGTH LABORATORIES			
Customer Name: John Smith		Date of Calibration: April 25, 2006	
Report Number: 2917		Date of Next Calibration: April 25, 2008	
Meter Serial Number: FC49999		Calibrated by: Robert Best	
Source Serial Number: WSA1999		Temp: 72°F	
Transfer Standard ID: FG21172		Rel. Hum. (%): 30%	
NIST # 814342		Technician's Signature: [Signature]	
Optical Light Source Certificate of Calibration			
Wavelength	850 nm	1300 / 1310 nm	1550 nm
Coupled Power	-20.0 dBm	-20.0/-10.0 dBm	-10.0 dBm
Fiber Core Diameter	62.5 μm	62.5/125 μm	9 μm
Connector Style	SC	SC / SC	SC
Optical Power Meter Certificate of Calibration			
Wavelength	850 nm	1300 / 1310 nm	1550 nm
Transfer Standard	-10.0 dBm	-10.0 dBm	-10.0 dBm
Before Calibration			
After Calibration	-10.0	-10.0	-10.0
Range Check			
8 dBm N/A	-10 dBm -10.00	-20 dBm -20.00	
1300 nm	-30 dBm -30.00	-40 dBm -40.00	-50 dBm -50.00
<b>N.I.S.T. TRACEABLE</b>			



WaveSource Series Light Sources can be bundled with a Fiber OWL or WaveTester optical power meter for accurate automatic dual wavelength optical power and loss measurements in both multimode and singlemode fiber links. See page 2 for more details about Fiber OWL Series kits, and page 6 for WaveTester Series kits.

### Description

WaveSource series fiber optic light sources offer the fiber optic professional a wide range of options for their testing needs. Several combinations are available: multimode only, singlemode only, or both multimode and singlemode. Our quad-wavelength version (WS-MDSD) has all four wavelengths (850, 1300, 1310, 1550) in one unit! Visual Fault Locators (VFL) can also be added to multimode only and singlemode only versions. VFLs can be used in both multimode and singlemode fibers. All versions of the WaveSource have two transmission modes: Continuous Wave (CW) for accurate temperature-stabilized fiber optic tests; and modulated mode. Modulated mode provides for an auto-testing function when used with the Fiber OWL 4 or WaveTester optical power meters. The modulated signal from the WaveSource tells the WaveTester to switch to the currently selected wavelength, which eliminates much of the guesswork during tests, and saves valuable time. WaveSource series light sources provide high output and stability at an economical price. The sources provide temperature-compensated outputs, and have an intuitive 4-button interface with controls for power, transmission mode, wavelength, and auto-test mode. LED indicators highlight the selected source and verify that battery power is sufficient to maintain the calibrated output power. WaveSource light sources come configured with your choice of SC, ST, or FC connector ports, as well as a protective rubber boot, carrying strap, 9-volt battery, NIST-traceable certificate of calibration, and CD-ROM with operations manual.

### Specifications

#### Light Source

Center Wavelength	
850	850 ± 30 / -10 nm
1300	1300 ± 50 nm
1310	1310 ± 20 nm
1550	1550 ± 30 nm
Spectral Width	
850	50 nm
1300	180 nm
1310	2 nm
1550	2 nm
Output Power	
multimode	-20.0 dBm (LED)
singlemode	-10.0 dBm (FP laser)
Output Modes	Continuous Wave / Modulated
Visual Fault Locator	
Center Wavelength	~650 nm
Output Type	Red fiber optic laser
Output Power	-2.0 dBm or greater
Output Modes	Continuous Wave/Modulated
Visual Range	up to 5 kilometers (3.1 miles)

### Ordering Info

WS-MD	WaveSource MM (850/1300nm)	545.00
WS-MDV	WaveSource MM w/VFL port (850/1300nm & 650nm VFL)	745.00
WS-SD	WaveSource SM (1310/1550nm)	1295.00
WS-VSD	WaveSource SM w/VFL port (1310/1550nm & 650nm VFL)	1495.00
WS-MDSD	WaveSource Quad (850/1300-MM & 1310/1550-SM)	1900.00

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## Singlemode

FREE LANYARD  
WITH EACH UNIT

### Specifications

<b>Light Source</b>		
Center Wavelength		
1310	1310 ± 30 nm	
1550	1550 ± 30 nm	
Spectral Width		
1310	2 nm	
1550	2 nm	
Output Power		
standard	-10.0 dBm (FP Laser)	
high-power	+ 0.0 dBm (FP Laser)	
Output Modes		
Continuous Wave		

### Ordering Info

LO-1310xx	Laser OWL 1310 (1310nm)	645.00
LO-1550xx	Laser OWL 1550 (1550nm)	825.00
LO-1xx	Laser OWL (1310/1550nm)	1195.00
LO-1310xx-HP	Laser OWL 1310 High-Power (1310nm)	795.00
LO-1550xx-HP	Laser OWL 1550 High-Power (1550nm)	995.00
LO-1xx-HP	Laser OWL High-Power (1310/1550nm)	1450.00

Laser OWL Series light sources are also offered as a part of Micro OWL Series and ZOOM Series test kits for accurate optical power and loss measurements. See page 4 for more information on the Micro OWL Series, and page 8 for the ZOOM Series.

### Laser OWL Series Description

Laser OWL Series fiber optic light sources offer fiber optic professionals a cost effective option for high quality singlemode fiber testing in a compact, handheld package. The temperature compensated outputs are calibrated to couple either of two optical power levels into singlemode fibers: -10dBm (standard) or 0 dBm (high-power). Light source options are offered with either 1310nm or 1550nm, or both 1310nm and 1550nm sources installed. The sources are simple to operate with a single switch controlling power and selecting the output wavelength. LED indicators highlight the selected source and verify that battery power is sufficient to maintain the calibrated output power. Laser OWL Series light sources come configured with your choice of SC, ST, or FC connector ports, as well as a protective rubber boot, carrying strap, 9-volt battery, NIST-traceable certificate of calibration, and CD-ROM with operations manual.

### Dual OWL Series Description

Dual OWL Series fiber optic light sources offer fiber optic professionals a cost effective option for high quality multimode fiber testing in a compact, handheld package. The temperature compensated outputs are calibrated to couple -20dBm of optical power into multimode fiber. Light source options are offered with either 850nm or 1300nm, or both 850nm and 1300nm sources installed. The sources are simple to operate with a single switch controlling power and selecting the output wavelength. LED indicators highlight the selected source and verify that battery power is sufficient to maintain the calibrated output power. Dual OWL Series light sources come configured with your choice of SC or ST connector ports, as well as a protective rubber boot, carrying strap, 9-volt battery, NIST-traceable certificate of calibration, and CD-ROM with operations manual.

### Specifications

Center Wavelength		
850	850 ± 20 nm	
1300	1300 + 50 / -10 nm	
Spectral Width		
850	35 nm	
1300	170 nm	
Output Power		
-20.0 dBm (LED)		
Output Modes		
Continuous Wave		

### Ordering Info

DO-850st	Dual OWL 850 ST (850nm; ST connector)	169.00
DO-850sc	Dual OWL 850 SC (850nm; SC connector)	184.00
DO-1300st	Dual OWL 1300 ST (1300nm; ST connector)	325.00
DO-1300sc	Dual OWL 1300 SC (1300nm; SC connector)	340.00
DO-1st	Dual OWL ST (850/1300nm; ST connectors)	395.00
DO-1sc	Dual OWL SC	420.00

Dual OWL Series light sources are also offered as a part of Micro OWL Series and ZOOM Series test kits for accurate optical power and loss measurements. See page 4 for more information on the Micro OWL Series, and page 8 for the ZOOM Series.

## Multimode

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## Multimode Singlemode



### Description

HOOTS stands for High Output Optical Talk Set. HOOTS Series fiber optic talk sets use our light source technology to convert your voice into optical signals, and provide full-duplex communications using a pair of terminated optical fibers. These talk sets are a reliable alternative to wireless communications systems used within a premise environment due to their electromagnetic immunity. We designed the HOOTS Series to be economical in order to be sold as an alternative to walkie-talkies. Optionally, they can be embedded as a permanent part of a fiber network installation. Use them during the installation for end-to-end voice communications, then after installation leave them attached to a spare pair of optical fibers inside the fiber patch panel. This way, the HOOTS can be used by Information Technology (I.T.) personnel for communications whenever operations or management functions need to be done in the fiber cable closet. There are several advantages to using a fiber talk set versus walkie-talkies. The first advantage is when I.T. personnel are setting up voice or data optical equipment, they may give away passwords and secret net addresses over un-secure walkie-talkie channels to a nearby neighborhood of listening ears! The second advantage is that everyone is buying these cheap walkie-talkies from the local discount stores. It's getting much more difficult to find free channels over the air waves. The third advantage is the noise and walls in many plants drown out radio signals. Fiber communications is more secure and most of all, immune to the effects of EMI/RFI. Four models are available: HOOTS 850 and HOOTS 1300 for communicating over multimode fibers, and Laser HOOTS 1310 and Laser HOOTS 1550 for singlemode fibers. Each set comes with a headset and headset adapter, hard-shell carrying case, protective rubber boots, carrying straps, 9-volt batteries, NIST-traceable certificate of calibration, and CD-ROM with operations manual.

### Specifications

Center Wavelength	
850	850 +30 / -10 nm
1300	1300 ± 50 nm
1310	1310 ± 20 nm
1550	1550 ± 30 nm
Spectral Width	
850	50 nm
1300	180 nm
1310	2 nm
1550	2 nm
Output Power	
multimode	-20.0 dBm (LED)
singlemode	-10.0 dBm (FP laser)
Receiver Dynamic Range	-20 to -40 dBm
Initial Accuracy	± 0.10 dB
Dimensions	4.94" x 2.75" x 1.28"

To calculate talkset distance:  $D = R / A$

where:  $D$  = talkset distance  
 $R$  = dynamic range (HOOTS = 20 dB)  
 $A$  = typical fiber attenuation at specified  $\lambda$

**Example ( $\lambda = 1300\text{nm}$ ,  $R = 20\text{ dB}$ ,  $A = 1.0\text{ dB/km}$ ):**  
 $D = 20\text{ dB} / (1.0\text{ dB/km}) = 20\text{ km}$

### Ordering Info

HO-850	HOOTS 850 multimode talk set (850nm; LED; ST connectors)	490.00
HO-1300	HOOTS 1300 multimode talk set (1300nm; LED; ST connectors)	900.00
LH-1310	Laser HOOTS 1310 singlemode talk set (1310nm; Laser; ST connectors)	1490.00
LH-1550	Laser HOOTS 1550 singlemode talk set (1550nm; Laser; ST connectors)	1850.00

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## Specifications

Launch Method	Red Laser
Output Power	>1 mW
Output Modes	CW/Flash
Visual Range	up to 5 kilometers
Battery Life	15 hours
Low Battery Indicator	Yes
Connector Style	ST
Dimensions	4.94" x 2.75" x 1.28"

## Ordering Info

PCVFL Precision-Coupled Visual Fault Locator 295.00

## Warning

Invisible optical radiation when power switch is set to the ON position – Avoid eye exposure to direct or scattered radiation

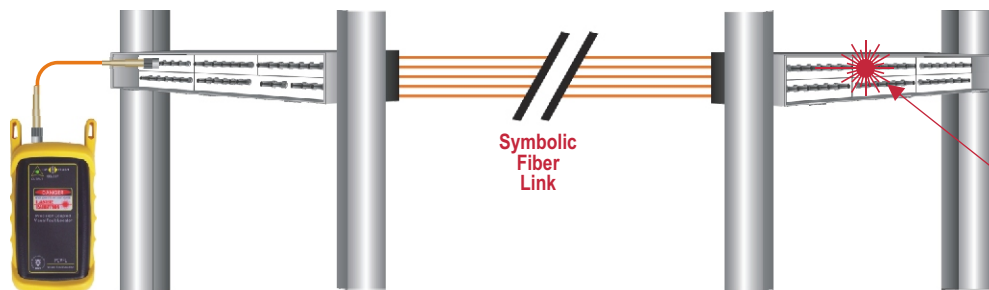


## PCVFL Description

PCVFL (Precision Coupled Visual Fault Locator) is a light-weight, hand-held tool used to quickly troubleshoot faults in the near-end of both singlemode and multimode fibers, as well as used for port identification and fiber continuity. The PCVFL holds its own against the best visual fault locators (VFL) in the industry. As with any quality VFL, the PCVFL uses a precision-coupled laser diode to inject a maximum amount of optical energy into an optical fiber. A multi-million dollar semiconductor machine is used in the manufacture of a special precision coupled micro sized ball lens. This tiny ball lens is used to focus the high-intensity red laser at the optimum point of the optical fiber core. Since cheap laser light pens do not use precision-coupling optics, their red lasers are not focused at the correct point, and thus produce sub-par results. Each unit comes with a protective rubber boot, carrying strap, 9-volt battery, and CD-ROM with operations manual.

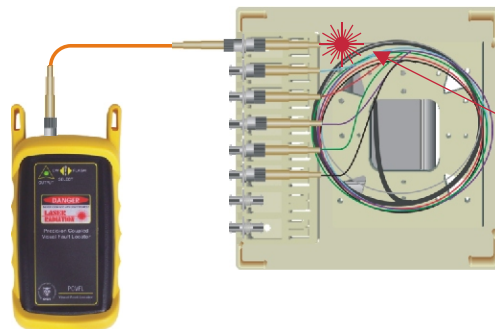


## Application #1: Port Identification



The PCVFL can help take the guesswork out of identifying ports in a fiber patch panel or checking polarity of a duplex connector. Connect the PCVFL to one end of a fiber link, and the high-intensity, precision-coupled red laser diode will allow the user to visually identify the port by the presence of a red glow emitting from the connector on the other end. The PCVFL allows for visual port identification of fiber optic links up to 5 kilometers (3.1 miles) away!

## Application #2: Visual Fault Location



The PCVFL can also be used as a troubleshooting tool to determine if there are breaks, micro-bends, or any other anomalies causing excessive loss within the first few feet of the fiber under test, located in the splice tray. The laser diode in the PCVFL injects high-intensity red laser light into the near-end connector. If this light encounters any anomalies, such as a break or a micro-bend, the light is deflected into the fiber jacket, producing a red glow at the point of the anomaly. Some optical fiber jackets are colored so that it is difficult to see red light shining through, so it is recommended to keep the room light at a minimum when using the PCVFL for visual fault location.

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## Optical Length Testers

### Visual Optical Length Tester (VOLT) Description

The VOLT uses a visible laser that can measure fiber links of up to 1.5 kilometers, and is accurate to within  $\pm 2.5$  meters. In addition to length testing, the VOLT's high-intensity laser permits it to do double duty as a visual fault locator, and a pulsing mode allows for easy visual fiber identification.

Each unit comes with a protective rubber boot, carrying strap, 9-volt battery, NIST-traceable certificate of calibration, and CD-ROM with operations manual.

For more information about OWL optical length testing technology, see page 14.

### Specifications

Range	up to 1.5 km
Accuracy	$\pm 2.5$ m (7 feet)
Resolution	0.001 km (1 meter)
Other Function	Doubles as a Visual Fault Locator (VFL)

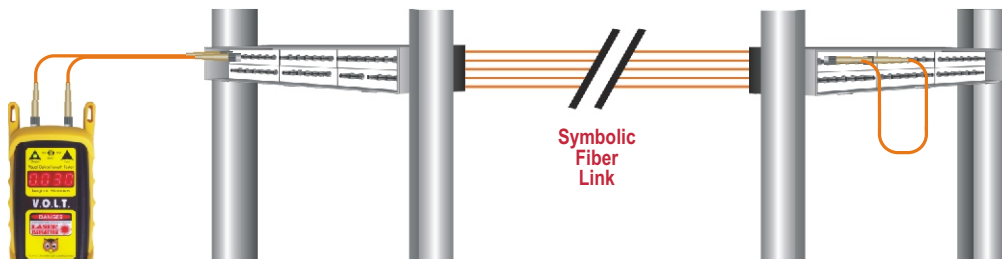
### Ordering Info

VOLT	Visual Optical Length Tester (red laser)	395.00
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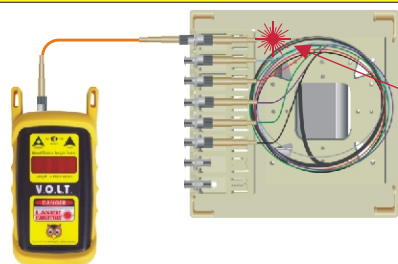
### Application #1: Fiber Length Measurement

The VOLT is designed to measure the length of optical fiber links up to 1.5km, and is accurate to  $\pm 2.5$  meters! The VOLT uses a "round-robin" method of measuring fiber length. This is accomplished by looping back two fibers at one end of the fiber run. The round trip time that the light takes to travel through the fibers is converted to length in kilometers, then divided by two to show the length of the fiber cable. There is no need to measure the length of all the fibers; the length measurement can be applied to all fibers in the cable. The VOLT can also be used to verify the amount of fiber on a spool prior to installation simply by connecting to the ends of the spool and multiplying the displayed fiber length by two.



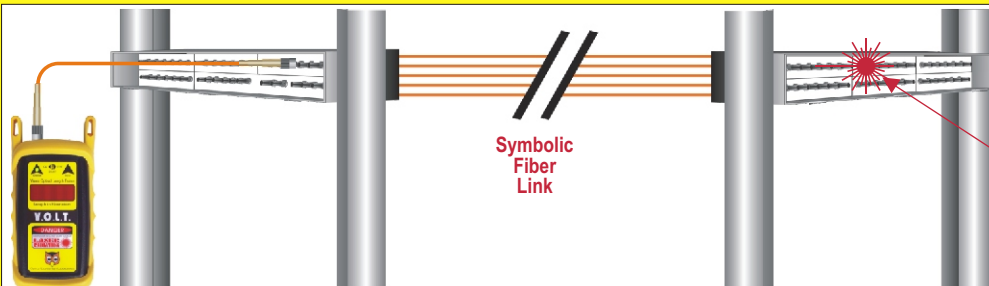
**Note: the VOLT is not an OTDR-like device. It does not measure distance to a fault. It is designed to measure the total length of a fiber link based on a two-fiber loopback method.**

### Application #2: Visual Fault Location



The VOLT can also be used as a troubleshooting tool to determine if there are breaks, micro-bends, or any other anomalies causing excessive loss within the first few feet of the fiber under test, located in the splice tray. The laser diode in the VOLT injects high-intensity red laser light into the near-end connector. If this light encounters any anomalies, such as a break or a micro-bend, the light is deflected into the fiber jacket, producing a red glow at the point of the anomaly. Some optical fiber jackets are colored so that it is difficult to see red light shining through, so it is recommended to keep the room light at a minimum when using the VOLT for visual fault location.

### Application #3: Port Identification



The VOLT can help take the guesswork out of identifying ports in a fiber patch panel or checking polarity of a duplex connector. Connect the VOLT to one end of a fiber link, and the high-intensity, precision-coupled red laser diode will allow the user to visually identify the port by the presence of a red glow emitting from the connector on the other end. The VOLT allows for visual port identification of fiber optic links up to 5 kilometers (3.1 miles) away!



### OWL Optical Length Tester Technology

OWL optical length testers offers a unique, low-cost alternative for users who need to measure the length of optical fibers. Fiber installations are increasingly required to have fiber length measurements to comply with bid requirements. Rather than purchasing a new certification test set that can cost thousands of dollars, these items can be added to an installer's existing fiber test kit. OWL length testers use a "round-robin" method of measuring fiber length. This is accomplished by looping back two fibers at one end of the fiber run with a patch cord. The round trip time that the light takes to travel through both fibers is converted to length in kilometers, then divided by two to show the length of the fiber cable. There is no need to measure the length of all the fibers; the length measurement can be applied to all fibers in the cable. This method of length testing provides accurate measurements, and saves time and money. Measuring fiber by the jacket or manual length measurement are accepted methods of measurement; however, there are many scenarios where this may not be possible. Length markings may be hard to reach if they are already terminated in a patch panel, and networks that contain riser cables may not be accurately measured. Optical measurement of fiber produces accurate results without the need for jacket markings or manual length measurement.

### Beaming Optical Length Tester (BOLT-NL) Description

The BOLT-NL can measure fiber links of up to 25 kilometers, and is accurate to within  $\pm 2.5$  meters. Each unit comes with a protective rubber boot, carrying strap, 9-volt battery, and CD-ROM with operations manual.

### Specifications

Range	up to 25 km
Accuracy	$\pm 2.5$ m (7 feet)
Resolution	0.001 km (1 meter)
Other Function	2 kHz tone mode for use with fiber identifiers

### Ordering Info

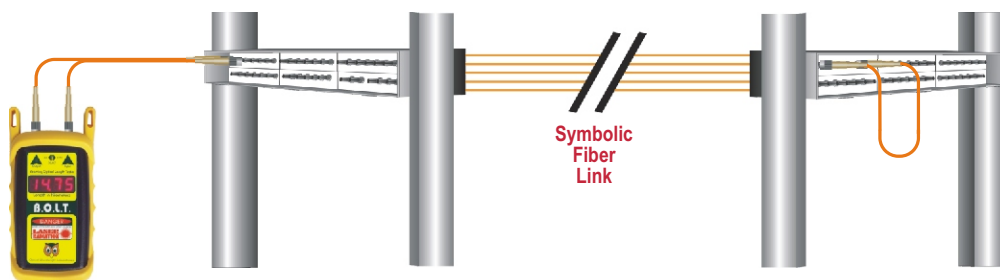
BOLT-NL Beaming Optical Length Tester

575.00



### Application #1: Fiber Length Measurement

The BOLT-NL is designed to measure the length of optical fiber links up to 25km, and is accurate to  $\pm 2.5$  meters! The BOLT-NL uses a "round-robin" method of measuring fiber length. This is accomplished by looping back two fibers at one end of the fiber run. The round trip time that the light takes to travel through the fibers is converted to length in kilometers, then divided by two to show the length of the fiber cable. There is no need to measure the length of all the fibers; the length measurement can be applied to all fibers in the cable. The BOLT-NL can also be used to verify the amount of fiber on a spool prior to installation simply by connecting to the ends of the spool and multiplying the displayed fiber length by two.



**NOTE:** the BOLT is not an OTDR-like device. It does not measure distance to a fault. It is designed to measure the total length of a fiber link based on a two-fiber loopback method.

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## Singlemode



## Description

The Fiber OWL 4 ORL is a highly accurate hand-held optical return loss meter, designed to measure the return loss of singlemode fiber networks. Additionally, it can be used for a wide range of functions from simple optical power and loss measurements to standards-based link certification of singlemode fibers. Its built-in Link Wizard walks the user through a series of steps, prompting the user to pick the parameters of their link under test, and sets an ORL reference based on these parameters. This reference is used as a point of reference by which a test will PASS or FAIL against the specified ORL level. When used with an OWL WaveSource singlemode fiber optic light source, the Fiber OWL 4 ORL provides fiber optic professionals with automatic wavelength switching so that the meter and source are always set to the same wavelength, and automatic dual-wavelength storage cuts down on testing time and human error. Up to 1000 fiber measurements can be stored in memory, and can be downloaded into a PC using our free OWL Reporter software via the supplied serial cable. OWL Reporter displays fiber tests in either a summary or detail view, and prints out professional-looking certification reports that can be passed along to customers as proof of link certification. Data can also be saved to hard disk for later retrieval. The Fiber OWL 4 ORL is enclosed in high-impact plastic, and a protective rubber boot provides additional shock protection. Its large backlit display is easy to read, and the 18-key pad allows for easy data entry. It can be used in many test environments, including LAN, MAN, WAN, FTTH, Telco, CATV, Manufacturing, and Laboratory.

Applications include:

- Optical Return Loss Measurement
- Attenuation Measurements
- Optical Loss Measurements
- Active Equipment Optical Power Measurements
- Fiber Standard Certification
- FTTH Link Loss Verification
- Patch Cord Testing

## Specifications

ORL Wavelengths	1310 / 1550 nm
Fiber Type	singlemode
Dynamic Range	68 dB
Detector Sensitivity	-67 dBm
Measurement Range	76 dB
ORL Uncertainty	±0.5 @ 60 dBm
Connector Type	SC/APC (8°)
Absolute Accuracy (power meter)	±0.15 dB
Display Resolution	0.01 dB
Precision (power meter)	±0.10 dB
Battery Life (hours)	up to 100 (9V)
Dimensions	3.48" x 6.48" x 1.1"
Weight	12 oz. (373 g)

## Ordering Info

FO-4-ORL	Fiber OWL 4 ORL optical return loss meter	2950.00
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Available from:

# CablesPlus

U S A

Cables Plus, LLC

8504 Glazebrook Ave Richmond, VA 23228 ~ Toll Free (866) 678-5852

www.CablesPlusUSA.com



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## Description

OWL Fiber To The Home (FTTH) Series test kits are ideal for the fiber optic professional who requires quick and accurate testing of FTTH links at 1310, 1490, and 1550nm, the wavelengths specified for use in the ITU G.983.3 FTTH PON standard.

Three models are available:

**KIT-FO4ORL-FTTH:** includes a Fiber OWL 4 ORL meter and WaveSource FTTH singlemode laser source, and allows the user to see Pass/Fail readings of optical loss and optical return loss on the screen in the field.

**KIT-FO4-FTTH:** includes a Fiber OWL 4 optical power meter and WaveSource FTTH singlemode laser source, and allows the user to see Pass/Fail readings of optical loss on the screen in the field.

**KIT-WT-FTTH:** includes a WaveTester optical power meter and WaveSource FTTH singlemode laser source for optical loss measurements; Pass/Fail analysis performed by OWL Reporter certification software.

All OWL FTTH Series test kits come with a hard-shell carrying case, protective rubber boots, carrying straps, download cable, 9-volt batteries, NIST-traceable certificate of calibration, and a CD-ROM containing product manuals and OWL Reporter software.

For more detailed information about WaveSource light sources, see page 9.

## Fiber OWL 4 ORL FTTH Test Kit

SKU	Meter	Source	Auto Test	ORL	Price
KIT-FO4ORL-FTTH	Fiber OWL 4 ORL	WaveSource FTTH	Yes	Yes	4605.00

This kit also includes a refillable fiber connector cleaner and SC/APC singlemode reference cable.

Please specify ST or SC connector type for WaveSource FTTH singlemode light source.

## Fiber OWL 4 FTTH Test Kit

SKU	Meter	Source	Auto Test	ORL	Price
KIT-FO4-FTTH	Fiber OWL 4	WaveSource FTTH	Yes	No	2550.00

Please specify ST or SC connector type for WaveSource FTTH singlemode light source.

## Accessories

To make your test kit complete, we have a broad range of accessories, including patch cords, cleaning supplies, power transformers, and multimode inspection scopes. OWL test kits come standard with carrying cases, protective rubber boots, carrying straps, download cables, and universal connector ports; however, replacements for these items are also available. For more information, please see pages 17-19 or call 262-473-0643.



## WaveTester FTTH Test Kit

SKU	Meter	Source	Auto Test	ORL	Price
KIT-WT-FTTH	WaveTester	WaveSource FTTH	Yes	No	2105.00

Please specify ST or SC connector type for WaveSource FTTH singlemode light source.

## Notes

If a kit part number contains 'xx', please specify 'ST', 'SC', or 'FC' depending upon your required connector type.

For more information about the PCVFL, see page 12.

Kits are also available with filtered detectors that are designed for CATV and other high-power application testing. Please call OWL at 262-473-0643 with any questions.

Available from:

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## Carrying Cases

Our hard-shell carrying cases are an excellent way to keep all of your OWL fiber optic gear together in one place, and provide additional protection from accidental droppage. Convenient pick-and-place foam inserts allow you to configure the case to best suit your needs. Three sizes are available: small, medium, and large.



CASE-SM



CASE-MD



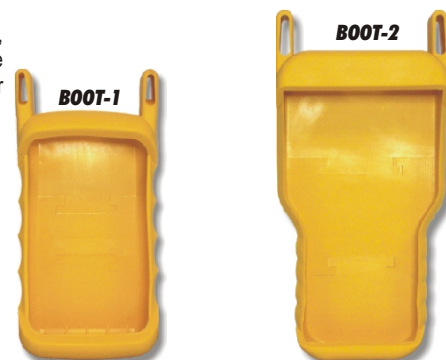
CASE-LG

### ORDERING INFORMATION

CASE-SM	Small carrying case	28.00
CASE-MD	Medium carrying case	37.00
CASE-LG	Large carrying case	38.00

## Protective Boots

These rubber boots help protect your OWL test equipment from impact in the case of accidental droppage, and the loops protect the equipment connector ports. Lanyards (available below) can also be attached to the loops at the top for hanging equipment on communications racks during testing. BOOT-2 is used for Fiber OWL series products, and BOOT-1 is used for all other products.



### ORDERING INFORMATION

BOOT-1	Small boot	7.50
BOOT-2	Large boot	10.00

## Lanyard

Protect your investment from accidental droppage with a lanyard. Two metal rings attach the strap to the protective rubber boot, which can then be used to hang the unit from a telecommunications rack during testing.



### ORDERING INFORMATION

Lanyard	OWL product lanyard	8.00
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## RS-232 Download Cable

Fiber OWL, Micro OWL, and WaveTester series optical power meters are designed to store data acquired during the testing of fiber optic links. This cable provides a RS-232 serial connection between these meters and a PC for downloading stored data to a PC. The meter connection is a 1/8" phono plug, and the PC connection is a DB9 female serial connector.



### ORDERING INFORMATION

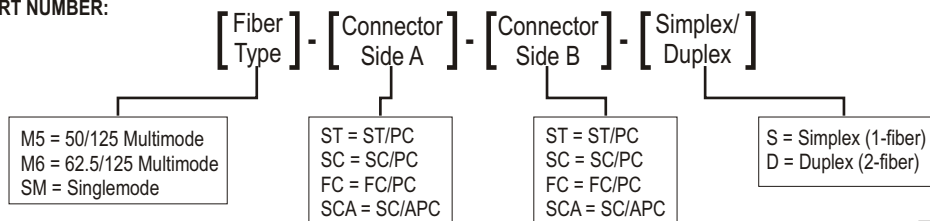
DB9-D	Duplex serial download cable	12.00
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## Patch Cords

Quality patch cords are vital to the success of optical power and/or link loss measurements, and ensure that test results are accurate and reliable. Many patch cord options are available, depending upon application, fiber type, and connector style, and can be added to an OWL test kit for a complete test solution. Patch cords are offered in 1 meter lengths only. Each patch cord purchase is covered under a one-time, 30-day replacement policy. Use the selection template below to determine the part number for your patch cords. Contact OWL at 262-473-0643 if you need assistance with choosing the correct patch cord for your application.

### PART NUMBER:



Shown here:  
singlemode ST-SC simplex

Part Number Example (shown above)

**SM-ST-SC-S**

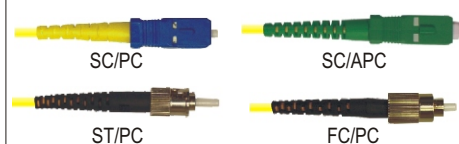
**NOTE:** singlemode patch cords generally have a yellow jacket, while multimode patch cords have an orange jacket.

**NOTE:** SC/APC connectors are only available with singlemode patch cords.

### ORDERING INFORMATION

Due to the large amount of patch cord options, we request that you call OWL at 262-473-0643 for pricing and availability.

### CONNECTOR STYLES



## Cleaning Supplies

Dirty patch cord connectors and equipment ports can cause unreliable test results, thus it is vitally important to keep them clean. Cleanliness is especially important for measuring Optical Return Loss (ORL), where even the slightest amount of dirt can cause an air gap which will fail an ORL test. OWL offers cleaning supplies to ensure that patch cords and equipment ports are clean, thus ensuring accurate and reliable tests.

The OWL connector ferrule cleaner is used to clean the endface of a fiber optic connector; a few figure-8 strokes of the connector on the cleaning tape is all that is needed to clean the connector.

### ORDERING INFORMATION

FCC-1	OWL ferrule connector cleaner	13.00
FCC-R	Tape refill for FCC-1	10.00

The HUXCleaner pen-style in-adaptor ferrule cleaner is a new popular and innovative product designed for cleaning inside connector ports. Models include a version for 2.5mm ports, and one for 1.25mm ports.

### ORDERING INFORMATION

HUX-2	2.5mm HUXCleaner	45.00
HUX-1	1.25mm HUXCleaner	54.00



## Fiber OWL / WaveSource Power Transformer

Fiber OWL series power meters and WaveSource light sources come equipped with a charger port that can be used for continuous wall operation or for recharging re-chargeable 9V batteries. The power connector is 1.3mm.

**NOTE:** using this transformer while non-rechargeable batteries are in the unit may produce an unsafe condition, and may cause harm to the equipment or the user.

### ORDERING INFORMATION

WS-9V-1.3	9V wall transformer (US only)	15.00
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1.3mm →

## WaveTester Power Transformer

WaveTester series power meters come equipped with a charger port that can be used for continuous wall operation or for recharging re-chargeable 9V batteries. The power connector is only for the 2.1mm port on the WaveTester.

**NOTE:** using this transformer while non-rechargeable batteries are in the unit may produce an unsafe condition, and may cause harm to the equipment or the user.

### ORDERING INFORMATION

WS-9V-2.1	9V wall transformer (US only)	15.00
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2.1mm →

Available from:

## 100x Multimode Fiber Inspection Scope

A dependable fiber inspection scope is a vital part of any fiber optic professional's tool kit. Inspecting patch cord connector endfaces before attaching them to equipment or patch panels saves time and effort, and ensures a quality connection. This 100x fiber inspection scope is an excellent low-cost option for inspecting multimode fiber connectors, and is one of the most dependable on the market, with a proven track record of quality views and affordability.



### ORDERING INFORMATION

FS100	100x multimode-only fiber inspection scope	85.00
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## Universal Adapter Caps

These universal adapter caps fit all current models of OWL optical power meters. The U2.5-4 connects to 2.5mm connectors such as ST, SC, and FC, and the U1.25-4 connects to LC, MU, and other 1.25mm SFF connectors.

### ORDERING INFORMATION

U2.5-4	2.5mm universal adapter	35.00
U1.25-4	1.25mm universal adapter	35.00

### TECHNICAL NOTE: UNIVERSAL CONNECTOR PORTS

OWL optical power meters take advantage of a flexible universal connector port system which allows multiple fiber optic connector styles to connect to the same port. Fiber optic connector ferrules come in two common sizes: 2.5mm (for ST, SC, FC, etc.) or 1.25mm (LC, MU, and other SFF connectors). A universal adapter cap is available for each ferrule size.

What gives our universal port its flexibility is that only the ferrule is inserted into the port. Since there is no latching mechanism to speak of, most connectors can connect to this port as long as the ferrule size matches the adapter cap.

Each cap is designed so that once the ferrule is completely inserted, the cone of acceptance from a fiber connector falls completely onto the photodetector, regardless of how the connector may turn, twist, or wiggle in the port. Because of this, you can be assured that the optical power reading will always be accurate.

By allowing connection to multiple connector types, OWL's universal port method minimizes costs and maintenance requirements.

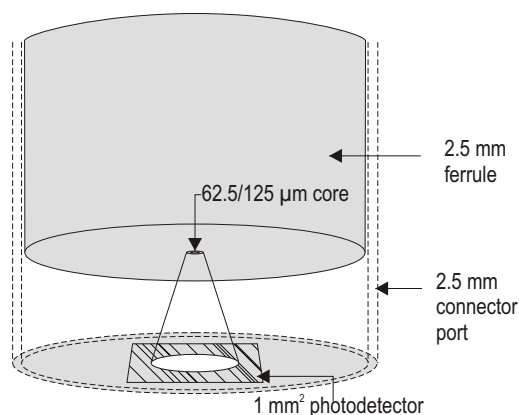
Please call our knowledgeable technical staff at 262-473-0643 with any questions you may have



**U2.5-4**




**U1.25-4**



**2.5mm Universal Connector Port Diagram**

Available from:






## Circuit Summary Report

### Optical Wavelength Laboratories

Link ID: \_\_\_\_\_ FL1: \_\_\_\_\_ Page: 1  
 Company Name: ACME CORP. Report Date: 12/19/2005  
 Telephone Number: 800-555-1234

Circuit ID	P/F	850nm	P/F	1300nm
FBR-001	Pass	2.79 dB	Pass	2.79 dB
FBR-002	Pass	2.92 dB	Pass	2.92 dB
FBR-003	Pass	2.16 dB	Pass	2.79 dB
FBR-004	Pass	2.79 dB	Pass	2.92 dB
FBR-005	Pass	2.92 dB	Pass	2.16 dB
FBR-006	Pass	2.16 dB	Pass	2.79 dB
FBR-007	Pass	2.79 dB	Pass	2.92 dB
FBR-008	Pass	2.92 dB	Pass	2.16 dB
FBR-009	Pass	2.16 dB	Pass	2.79 dB
FBR-010	Pass	2.79 dB	Pass	2.92 dB
FBR-011	Pass	2.92 dB	Pass	2.16 dB
FBR-012	Pass	2.16 dB	Pass	2.79 dB
FBR-013	Pass	2.79 dB	Pass	2.92 dB
FBR-014	Pass	2.92 dB	Pass	2.16 dB
FBR-015	Pass	2.16 dB	Pass	2.79 dB
FBR-016	Pass	2.79 dB	Pass	2.92 dB
FBR-017	Pass	2.92 dB	Pass	2.16 dB
FBR-018	Pass	2.16 dB	Pass	2.79 dB
FBR-019	Pass	2.79 dB	Pass	2.92 dB
FBR-020	Pass	2.92 dB	Pass	2.16 dB
FBR-021	Pass	2.16 dB	Pass	2.79 dB
FBR-022	Pass	2.79 dB	Pass	2.92 dB
FBR-023	Pass	2.92 dB	Pass	2.16 dB
FBR-024	Pass	2.16 dB	Pass	2.79 dB

Installer/Tester: \_\_\_\_\_ Date: \_\_\_\_\_  
 Customer: \_\_\_\_\_ Date: \_\_\_\_\_



## Circuit Detail Report

### Optical Wavelength Laboratories

Link ID: \_\_\_\_\_ FL1: \_\_\_\_\_ Page: 1  
 Company Name: ACME CORP. Meter Type: FiberOWL  
 Telephone Number: 800-555-1234 Serial Number: SN F099999  
 Report Date: 12/19/2005 Software Version: V4.20a

Circuit ID: FBR-001 Date of test: 7/28/2005  
 Calibration Date: 4/12/2005 Temperature: 84.0 F

### Circuit Characteristics

Fiber Length (in kilometers): 1.00  
 Number of Connector Pairs: 2  
 Number of Splices: 2  
 Cable Type: INDOOR 5M  
 Standard: ANSI/IEA/TIA568B.3

### Circuit Test Results

	1310nm
Passive Cable System Attenuation	
Light Source Reference Power	-11.70dBm
Fiber Loss	1.00dB
Connector Loss	1.50dB
Splice Loss	0.50dB
Total Allowable System Loss	3.10dB
Minimum Required Power	-14.80dBm
Measured Power	-12.10dBm
System Overhead	2.70dB
Operating Margin %	88.50%
Pass/Fail	Pass

Installer/Tester: \_\_\_\_\_ Date: \_\_\_\_\_  
 Customer: \_\_\_\_\_ Date: \_\_\_\_\_

Test kits containing a certification-ready optical power meter and fiber optic light source are the best option for fiber network certification, preferably ones that come pre-configured with fiber cabling standard loss parameters. These kits ensure that the network meets the end-to-end loss requirements based on industry-accepted cabling standards. And as bandwidth requirements increase, link budgets become tighter, requiring greater accuracy from fiber optic loss testing equipment.

Invariably, someone will ask about certifying a fiber network with an optical time domain reflectometer, or OTDR. OTDRs are excellent pieces of equipment and are a vital part of any fiber optic professional's test arsenal. OTDRs are good at getting a snapshot of the fiber link and determining where a problem is, but are not a viable option for network certification since they are inherently inaccurate in measuring optical power.

Certification test sets also offer a distinct advantage over standard optical loss kits. Here is an analogy to help demonstrate this advantage: you need to cross a frozen lake, but are unsure if the ice is thick enough to support your weight, or better yet, the maximum weight it can support. Thus, you need to test the ice to make sure you can cross. Likewise, a fiber can pass light but until the fiber is certification tested, you cannot be sure if the amount of light will be enough to support your current bandwidth requirements. Is your network operating with sufficient overhead, or are some of your fiber links may be operating right on the line of your PASS/FAIL threshold, ready to suffer intermittent failures with the slightest change in environment (i.e. temperature, humidity, or mechanical vibration)? Also, will the fiber support the future bandwidth requirements of next generation fiber networks? Can your current link power budget be resilient enough to handle an upgrade to gigabit standards? The only way to know for sure is by using quality certification test sets such as the OWL series of certifying fiber optic test equipment.

Optical certification is widely accepted as the proper way to test a fiber network, and is required by industry and governments worldwide. No reputable fiber optic cable installer goes without a certifying power meter for reasons including:

**Network cable warranties** - Almost every extended fiber optic cable warranty requires a certification report be sent to the cable manufacturer to qualify for long term warranty approval;

**Network installation bids** - Bids more often than not require the installer to submit certification reports, especially when working with government institutions;

**Arbitration resolution** - Certification reports can be used as proof of quality work in case a dispute arises between installer and customer, such as determining whether the problem is related to the active network equipment or the fiber optic installation.

With NIST-traceable OWL certification test kits and proper industry test procedures, you and your customers can rest assured that you have installed a quality fiber optic network.

Available from:

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